Y Buffer

SMPS

X Main

Y Main

Logic

Main

Spkr | Buffer E

Buffer F | Spkr

Func.

Service Bulletins:

2011 PDP Option Byte Table - ASC20110630001 .

Quick Parts List:

Version	Parts No	Short Description
ALL	BN44-00443A	SMPS
N101	BN96-16513A	Logic Main PCB
N102	BN96-16513A	Logic Main PCB
ALL	BN96-16514A	Buffer E
ALL	BN96-16515A	Buffer F
ALL	BN96-16516A	X Main
N101	BN96-16517A	Y Main
N102	BN96-16517A	Y Main
ALL	BN96-16518A	Buffer X
N101	BN96-16519A	Y Main Scan
N102	BN96-16519A	Y Main Scan
ALL	BN96-16730B	Function & IR PCB
ALL	BN96-19471A	Main PCB
N411	BN96-20511A	Y Main
N411	BN96-20512A	Buffer Y
N411	BN96-20513A	Logic Main PCB
N101	BN96-16471A	Panel
N102	BN96-17357A	Panel
N411	BN96-20477A	Panel
ALL	BN96-16783A	Rear Cover
ALL	BN96-16786A	Stand Guide
N101	BN96-16789A	Stand Base
N102	BN96-16789A	Stand Base
ALL	BN96-16789C	Stand Base
ALL	BN96-17870A	Front Cover
ALL	3903-000552	Power Cord
N102	BN40-00140B	Tuner
N101	BN40-00140B	Tuner
ALL	BN96-13325F	LVDS Cable
ALL	BN96-18071C	Speaker
ALL	AA59-00506A	Remote

HELP: 1-888-751-4086 (Tech Support)

GSPN

http://service.samsungportal.com/EP/web/portal/jsp/EP_Default1.jsp

PLUS ONE

http://my.plus1solutions.net/clientPortals/samsung

HOT TIPS

-**Power On Problems:** (pg. 3)
-**Video Problems:** (pg. 4)

Latest Firmware:

None – As of 4/19/12

Y-BUFFER

SMPS

Y-DRIVE

X-DRIVE

LOGIC

MAIN BOARD

SPEAKER

E-BUFFER

F-BUFFER

FUNCTION
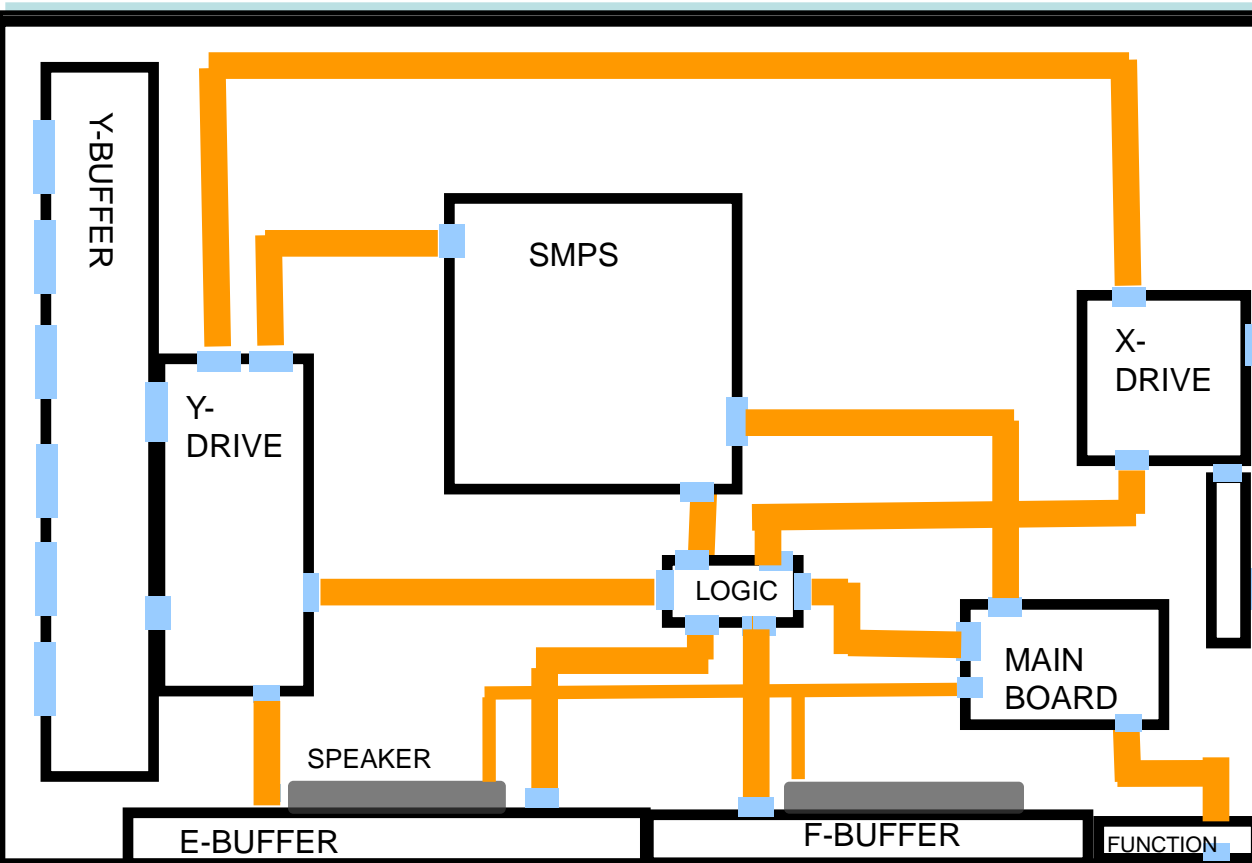
Power On Sequence:

1. **STBY 5V (CN801, #2, 5v)**
2. **PS_ON   (CN801, #1, 3.3v-0v)**
3. **VS_ ON (CN802, #6, 0-3.3v)**
4. **Panel should illuminate briefly**

(2) 51" only CN802 (SMPS) - CN2002 (LOGIC)	
Pin No.	Signal
1	D5.3V
2	D5.3V
3	GND
4	GND
5	PS_ON
6	VS_ON

(3) CN804 (SMPS) - CN5000 (Y-BOARD)	
Pin No.	Signal
1	Vs
2	Vs
3	GND
4	Vg
5	GND
6	Va

(4) CN801 (SMPS) - CN101 (MAIN)	
Pin No.	Signal
1	PS_ON
2	STBY
3	GND
4	VAMP
5	GND
6	GND
7	D5.3V
8	D5.3V
9	GND
10	15V
11	15V
12	D5.3V

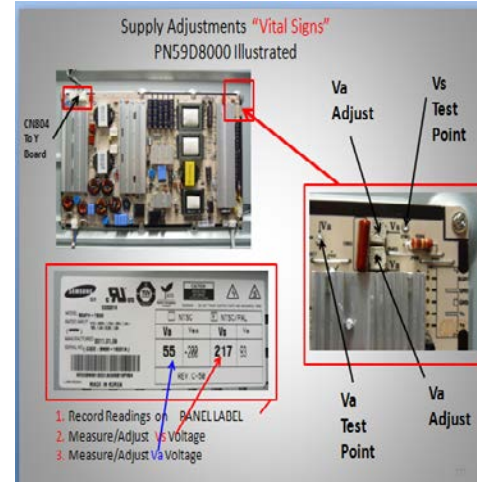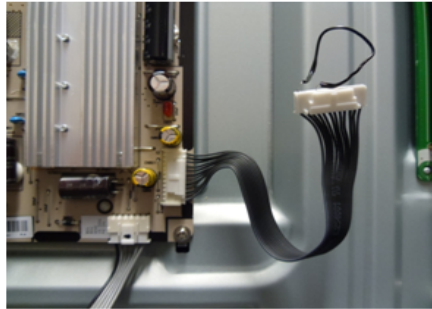| (5) CN710 (MAIN) - FUNCTION	
Pin No.	Signal
1	IR
2	GND
3	A3.3V
4	SCL
5	SDA
6	KEY_INPUT1
7	KEY_INPUT2
8	LED_STB

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"Troubleshooting"

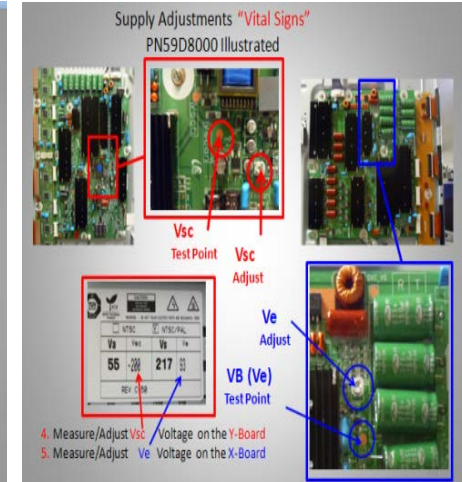### Activating Power & Logic Board Test Patterns without Main Board:

1. Remove Power Cord to Panel
2. Short Highest 2 Pin #s on Logic Board Test Jig (Can be 4 Pin or 6 Pin)
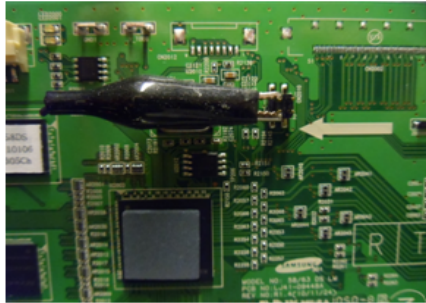
3. Remove Power Connector at Main Board (keeping connection to SMPS)
4. Short "Power On" Pin to Circuit Ground on Power Connector to SMPS.
5. Connect Power Cord to Panel

Supply Adjustments "Vital Signs"
PN59D8000 Illustrated

CN804 To Y Board

Va Adjust   Vs Test Point

Va Test Point   Va Adjust

1. Record Readings on PANEL LABEL
2. Measure/Adjust Vs Voltage
3. Measure/Adjust Va Voltage

Supply Adjustments "Vital Signs"
PN59D8000 Illustrated

Vsc Test Point   Vsc Adjust

Ve Adjust   VB (Ve) Test Point

4. Measure/Adjust Vsc Voltage on the Y-Board
5. Measure/Adjust Ve Voltage on the X-Board

Sample

Power Supply Trouble Shooting Notes:

2010/2011 models

Will not be run with the "X" or "Y" main disconnected. The SMPS will shut down immediately. However if a meter is first connected to the test point when power is applied it will read the correct voltage briefly before shut- ting down.(You have enough time to check key voltages)

CAUTION: Do not reconnect any connectors to SMPS or Y/X Boards until power has been turned off long enough for Vs to drop below 10V or damage will occur to X or Y Boards.

SMPS Over Current Protection

If a short circuit occurs on either the VS or VA voltage lines, the SMPS stops operating, but should not fail. When the short circuit is removed from the source line, the Power Supply will operate normally again. **Many SMPS Supplies are replaced needlessly!**

"VITAL SIGNS"

When troubleshooting, It's very important to first check **Vs, Va, Vsc & Ve** If **Vs** is missing (0V), disconnect power and check for short. Use ohm meter to measure resistance while disconnecting Y-Board & X-Board supply feeds one at a time.
Turn Power On and Test SMPS with shorted connector removed for correct Vs voltage verification. (It may only come up briefly but to full level). Be careful not to reconnect power connectors until Vs falls below 10V.

If **Va** is low or missing, disconnect power connectors to Address Boards and Check to see if SMPS Supply is restored. (Note Va feed normally passes through the Y-Drive to the Address Boards (Logic Buffer Boards).

If **Vsc** is low or missing and Vs is OK, the failure is with the **Y-Board** since the Y-Board generates the Vsc voltage from the supplied Vs.

If **Ve** is low or missing and Vs is OK, the failure is with the **X-Board** since the Ve is generated by the X-Board from the supplied Vs. (Please note: In some rare cases the Ve is generated by the Y-Board fed to the X-Board.)

Other SMPS Voltages:
Check Low Voltage feeds to the Main Board and other supplied Assemblies.

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TROUBLESHOOTING VIDEO PROBLEMS

1. Verify Video Operation

a) **Customer Picture Test** (if available)
b) **"Display"** (If display is OK source is suspected)
c) Substitute with known good Source (**external DVD or Signal Generator**)

2. Using Test Patterns in Service Mode
- ENTERING SERVICE MODE –
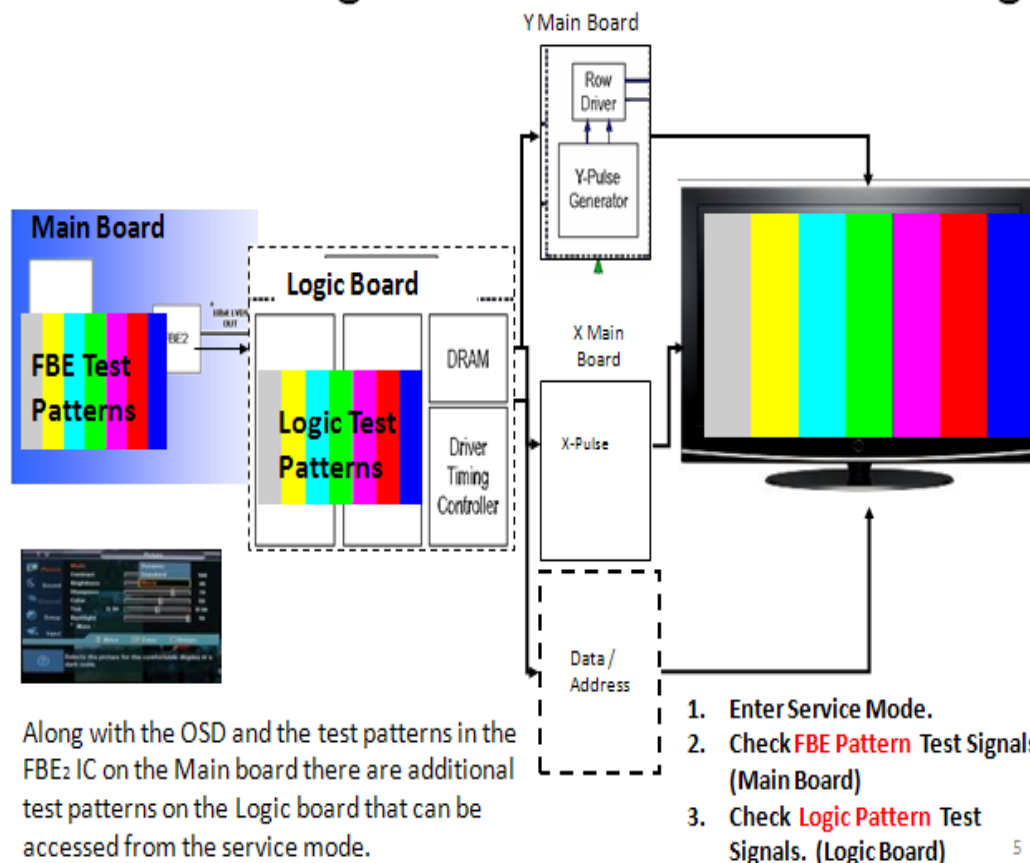
Customer Remote:
1. Power off
2. Mute, 182, Power

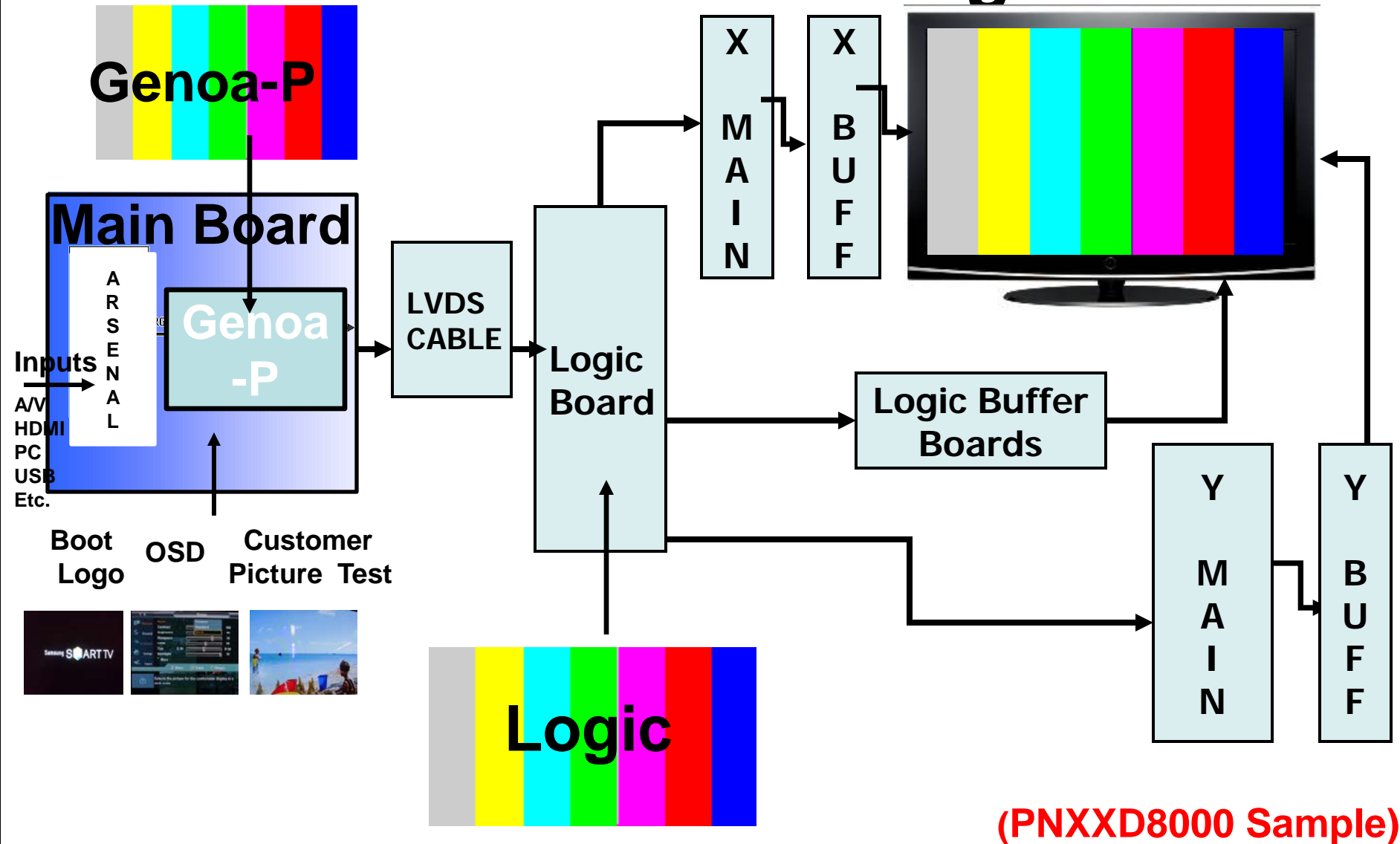Service Remote:
1. Power On
2. Info, Test

3. Determine cause

a) If Logic pattern is NG; Logic board, Logic buffers or Panel are suspect.
b) If FBE patterns is NG and Logic is OK; Main or LVDS cable are suspect.
c) If both are OK it is likely a source issue.

2010 PDP Signal Path for Troubleshooting

Y Main Board

Row Driver

Y-Pulse Generator

Main Board

Logic Board

DRAM

FBE Test Patterns

Logic Test Patterns

Driver Timing Controller

X Main Board

X-Pulse

Data / Address

Along with the OSD and the test patterns in the FBE₂ IC on the Main board there are additional test patterns on the Logic board that can be accessed from the service mode.

1. Enter Service Mode.
2. Check FBE Pattern Test Signals. (Main Board)
3. Check Logic Pattern Test Signals. (Logic Board)

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2011 PDP Signal Path for Troubleshooting

Genoa-P

Main Board

ARSENAL

Genoa-P

Inputs

A/V
HDMI
PC
USB
Etc.

Boot Logo   **OSD**   **Customer Picture**   **Test**

LVDS CABLE

Logic Board

X MAIN   **X BUFF**

Logic Buffer Boards

Y MAIN   **Y BUFF**

Logic

(PNXXD8000 Sample)

ALIGNMENTS & OPTION BYTES :

1. Check/Adj. VS, VA, VE, & VSC according to Panel Label and Diffusion test. (see bulletins for any special notes before making changes)
2. Check/Set Option Bytes:
    - ENTER SERVICE MODE -
    a) Customer Remote: Power off; Mute, 182, Power On
    b) Service Remote: Power On; Info, Test

Model Code	PN51D450A2DXZA						
Side Label	**Option**						
	Type	**Model**	**Tuner**	**Light Effect**	**Ch Table**	**Country**	**Front Color**
N101	51DHHcD	PD450	ALPS	-	-	other	P-S-C-BK
N102	51DHHcD	PD450	ALPS	-	-	other	P-S-C-BK
N303	51DHHcD	PD450	ALPS	-	-	other	P-S-C-BK
N304	51DHHcD	PD450	ALPS	-	-	other	P-S-C-BK
I105	51DHHcD	PD450	ALPS	-	-	other	P-S-C-BK
I406	51DHHcD	PD450	ALPS	-	-	other	P-S-C-BK
I107	51DHHcD	PD450	ALPS	-	-	other	P-S-C-BK
I408	51DHHcD	PD450	ALPS	-	-	other	P-S-C-BK

DIFFUSION TEST/ADJ. (cell miss-firing, older units)
- **Allow the unit to warm up 15 to 20 minutes**
- **Access the Burn Protect Sig. Pattern in Cust. Menu.**
-**Adjust the Vs volts until screen errors are gone in**
both dark and bright areas.
- **Adjust the Vs volts within +/- 10V on the panel label.**

SPECIAL NOTES:
See bulletin "Red Dots" for correction/ adjustments for this model.